

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000977**Date Inspected:** 02-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2330**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:****CWI Present:****Yes No****Inspected CWI report:** **Yes No N/A****Rod Oven in Use:** **Yes No N/A****Electrode to specification:** **Yes No N/A****Weld Procedures Followed:** **Yes No N/A****Qualified Welders:** **Yes No N/A****Verified Joint Fit-up:** **Yes No N/A****Approved Drawings:** **Yes No N/A****Approved WPS:** **Yes No N/A****Delayed / Cancelled:** **Yes No N/A****Bridge No:** 34-0006**Component:** 89 meter and 114 meter mock up assemblies.**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) inspector, Scott Croff, was present at Zhenhua Port Machinery Company, Ltd (ZPMC) to observe the scheduled mock up construction and production construction of the SAS Superstructure.

Upon the QA inspector's arrival to the fabrication area, the Quality Control Liaison (QCL) "Ken" Zhang Jiadi informed the QA inspector that ZPMC technicians have conducted magnetic particle testing (MT) on the partial joint penetration (PJP) root welds #1 and #2 of the 89 meter mock up, skin plate "D" part #MUSB-MA22. The PJP root welds are between the skin plate and both sides of a stiffener plate. The QA inspector noted that the designed 26mm PJP welds were inspected by ZPMC at ambient temperature. The QA inspector made random observations of the PJP root welds and conducted MT verification of the root welds. At the time of observation, the ambient PJP root welds appeared to be conforming to the contract requirements. See the attached TL-6028 report for more information.

The QA inspector observed a partial excavation of a PJP root weld on the 89 meter shear link assembly. The QCL "Ken" informed the QA inspector that a ZPMC technician had conducted MT on the root weld and rejected the portion that was excavated. The QA inspector was asked to verify that no additional MT indications could be observed. The QA inspector noted that no "MTOK" marking are visible from ZPMC and the QCL was asked what kind of indication was removed. The QCL replied that a "crack" was identified during the MT, the crack measured approximately 13mm. The QA inspector measured the excavation and noted that the excavation appears to be insufficient to AWS D1.5 requirements at this time. The QCL was shown AWS D1.5, section 3.7.2.4, as it requires the removal of an additional 50mm on each side of the excavation. The QA inspector noted that the

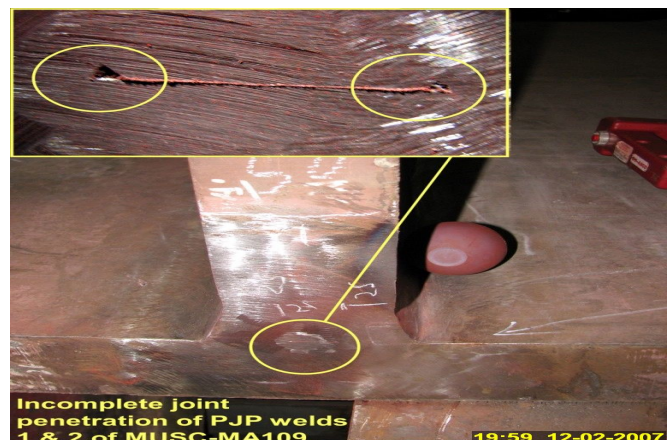
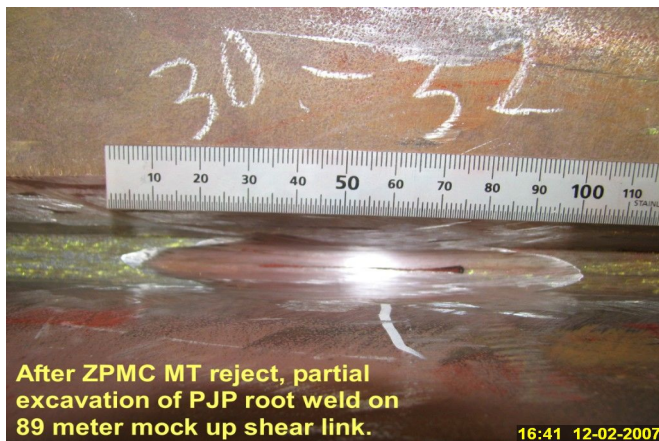
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current excavation appears to be about 60mm total.

The QA inspector Alfred Acuna asked the QA inspector to conduct ultrasonic testing (UT) verification on complete joint penetration (CJP) welds on web connection plates (SA-24) for the 89 meter mock up. The QA inspector was conducting visual observations of the completed welds and while reviewing the approved shop drawings for these parts, the QA inspector noted that the approved weld design and approved fabrication drawings require 60mm thick plate. The QA inspector measured the actual plates used for fabrication at approximately 77mm thick. The QA inspector relayed this question to ZPMC workers in Bay 2, through the QCL "Ken". The QA inspector observed the ZPMC workers consult the drawings and measure the plate thicknesses of these parts. The QA inspector was then informed that these parts will be "milled" down to 60mm at a later time. The QA inspector reviewed the fabrication plan for the construction of these parts and could not identify any "milling" of these parts on the plans.

The QA inspector observed completed CJP and PJP welds on the 114 meter mock up, skin "E" MUSC-MA109. The QA inspector noted that ZPMC technician Zhou Dong Yun has conducted MT and accepted these completed welds on 12-2-2007. The QA inspector then conducted verification MT of these completed welds. During the verification MT, the QA inspector observed that the termination of the PJP welds #1 and #2 appear to have incomplete joint penetration. The approved weld design requires 26mm of penetration at the root/bevel. The QA inspector measured 25mm of penetration on these welds at the termination. The QA inspector showed the QCL "Ken" the weld design and informed the QCL that these welds appear to have incomplete joint penetration. See the attached TL-6028 report for more information. See the attached photos.



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Summary of Conversations:

As noted above, the QA inspector Scott Croff had several conversations with the QCL "Ken" regarding the status of inspections that were conducted by ZPMC technicians. The notable conversations between the QA inspector and the QCL are described above.

As noted above, at the QA inspector Alfredo Acuna asked the QA inspector to conduct UT verification of the completed web connection plates (SA-24). Upon the observations of the plates, described above, the QA inspector Scott Croff relayed back to the QA inspector Alfredo Acuna, the observations and conversations about the plate thickness and "milling" that will be done. The QA inspector Scott Croff also asked for confirmation to conduct the UT verification.

The QA inspector Scott Croff and the QA inspector Ken Jobes had conversations regarding the above noted observations and had other general conversations about the progress of work observed. The QA inspector Ken Jobes informed the QA inspector Scott Croff of additional notable observations to relay to the 1st shift via email. There were no other notable conversations during this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Croff, Scott	Quality Assurance Inspector
Reviewed By:	Cuellar, Robert	QA Reviewer
